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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/545,888	04/07/2000	Akira Koyama	F-10110	2164

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EXAMINER

RYMAN, DANIEL J

ART UNIT	PAPER NUMBER
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2665

DATE MAILED: 07/22/2003

5

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/545,888

Applicant(s)

KOYAMA, AKIRA

Examiner

Daniel J. Ryman

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 April 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 April 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3,4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign(s) not mentioned in the description: 602, 604, and 605 (see Fig. 15 and page 1, line 24-page 2, line 6); 905, 907, and 909-913 (see Fig. 13 and page 18, lines 5-29); and 960, 961, 963, 964, and 967 (see Fig. 14 and page 19, lines 6-29). A proposed drawing correction, corrected drawings, or amendment to the specification to add the reference sign(s) in the description, are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.
2. Figure 15 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

3. 35 U.S.C. 112, first paragraph, requires the specification to be written in "full, clear, concise, and exact terms." The specification is replete with terms which are not clear, concise and exact. The specification should be revised carefully in order to comply with 35 U.S.C. 112, first paragraph. Examples of some unclear, inexact or verbose terms used in the specification are: on page 1, lines 15-16 "information devices such as personal computers are introduced" should be "information devices such as personal computers have been introduced" and on page 2, lines 4-5 "voice signal 601 is recovered by assembling IP packet 603" should be "voice signal 601 is recovered by disassembling IP packet 603".

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4. The disclosure is objected to because of the following informalities: "voice" is repeatedly misspelled as "vioce" throughout the specification (e.g. page 1, line 18; page 2, line 1; page 12, line 19; page 13, line 8; page 15, line 17). On page 2, line 27 "bas reset" should be "bus reset". On page 9, line 26 "extension table 201" should be "extension node 201". On page 10, line 18 "cinnected" should be "connected". On page 11, lines 11-12 "bus 702" should be "bus 710". On page 13, line 15 "ececutes" should be "executes". On page 14, line 25 "sybchronous" should be "synchronous". On page 16, line 4 "display 721" should be "display 720". On page 17, line 18 "Fig. 11" should be "Fig. 12". On page 19, line 25 "cal-out" should be "call-out."

Appropriate correction is required.

5. Examiner requests that Applicant review the specification for any further grammatical errors that Examiner could have overlooked.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Akatsu et al (USPN 6,496,862) in view of Kobayashi et al (USPN 6,144,411).

8. Regarding claim 1, Akatsu discloses a network switching system wherein stream data transferred on a serial bus are exchanged through a gateway between an outside line and an extension node, or between an extension node and the other extension node (col. 2, line 54-col. 3, line 52), wherein said extension node comprises: control/memory unit (ref. 428) for

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controlling said network (col. 6, lines 16-31); an asynchronous interface, for selecting said extension node and controlling a switching timing (col. 2, lines 59-67 and col. 5, line 55-col. 6, line 32) where asynchronous packet sending and receiving necessitates an asynchronous interface, connected with said control/memory unit (col. 5, line 55-col. 6, line 32) where the control unit communicates with the physical layer, the link layer, and the transaction layer and therefore would communicate with the asynchronous interface; and an isochronous interface, for transmitting and receiving said stream data (col. 2, lines 59-67 and col. 5, line 55-col. 6, line 32) where isochronous packet sending and receiving necessitates an isochronous interface. Akatsu possibly does not expressly disclose a control/memory unit for storing physical identifiers and telephone numbers of said gateway node and extension nodes. Akatsu does disclose that communications on the bus is peer-to-peer meaning each device can communication with any other device on the bus without the need for scheduling through a central controller (col. 3, lines 6-11). Akatsu also discloses that each node has an address (col. 5, lines 33-47). Although not explicitly stated, Akatsu suggests that each node contains a memory unit for storing physical identifiers and telephone numbers of the gateway node and extension node in order to allow each node to properly address each communication with other nodes on the bus. Akatsu also possibly does not expressly disclose a rate conversion unit for converting data rate of the stream data in said network into that in said outside line, or converting the other way around where the isochronous interface is connected with said rate conversion unit. Kobayashi teaches converting the rate of stream data being output of an isochronous interface in an IEEE 1394 bus system in order to have the rate of the stream data match the transfer rate of the system (col. 1, lines 58-67; col. 7, lines 16-29; and col. 7, lines 50-60). It would have been obvious to one of ordinary skill in

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the art at the time of the invention to have a rate conversion unit for converting data rate of the stream data in said network into that in said outside line in order to ensure that the rate of the stream data matches the transfer rate of the outside line where mismatched data rates could result in data errors.

9. Regarding claim 2, referring to claim 1, Akatsu in view of Kobayashi discloses that the external line can be telephonic (Akatsu: Fig. 6 and col. 7, line 27), that the isochronous data is real time data (Akatsu: col. 9, lines 40-64), and that the internal bus will only support digital communication such that analog-to-digital conversion (codec) is necessary for any analog signals to be sent along over the internal line (Akatsu: col. 3, lines 1-6). Although not expressly stated, it would have been obvious to one of ordinary skill in the art at the time of the invention to have a microphone for inputting the stream data and a speaker for outputting the stream data since voice is very well known real time data and an external link to a telephone line suggests telephonic signals. It also would have been obvious to one of ordinary skill in the art at the time of the invention to have a codec, for encoding and decoding said stream data, connected with the microphone, the speaker and the rate conversion unit for encoding and decoding said stream data in order to perform DAC and ADC on the signal streams of the microphone, speaker, and rate conversion unit such that all the information transmitted on the internal line is digital data.

10. Regarding claim 3, referring to claim 1, Akatsu in view of Kobayashi discloses that extension node further comprises: a stream data take-in unit (buffer), for storing said stream data (Akatsu: col. 7, lines 3-10), connected with said rate conversion unit (Kobayashi: col. 1, lines 58-67; col. 7, lines 16-29; and col. 7, lines 50-60); and a stream data processing unit (control logic

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for displaying buffered data), for processing said stream data, connected with said stream data take-in unit (Akatsu: col. 7, lines 3-10).

11. Regarding claim 4, referring to claim 1, Akatsu in view of Kobayashi discloses that said asynchronous interface and said isochronous interface are connected with a bus manager which controls said asynchronous interface, said isochronous interface, said control/memory unit, and said rate conversion unit (Akatsu: col. 2, lines 59-69 and col. 5, line 55-col. 6, line 32, esp. col. 6, lines 16-32).

12. Claims 5-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Akatsu et al (USPN 6,496,862).

13. Regarding claim 5, Akatsu discloses a gateway which comprises a first switching unit (bus manager) for controlling extension nodes connected with a serial bus for isochronous transfer (col. 2, lines 59-69 and col. 5, line 55-col. 6, line 32, esp. col. 6, lines 16-32) where since the gateway is a node on the IEEE 1394 bus, it would contain the hardware and software components of an IEEE 1394 node, and second switching unit (ATM driver and 1394 driver) for exchanging stream data between an outside line and said extension nodes (Fig. 8; col. 8, lines 30-40; and col. 8, line 51-col. 9, line 19), wherein: said first switching unit comprises a bus manager connected with an asynchronous interface and an isochronous interface (col. 2, lines 59-69 and col. 5, line 55-col. 6, line 32, esp. col. 6, lines 16-32; and col. 9, lines 40-64); and said second switching unit comprises a line manager (1394 interface) (col. 7, lines 15-59) connected with a codec (col. 7, lines 15-59, esp. col. 7, lines 58-59) and a control/memory unit (col. 9, lines 10-30), wherein said line manager exchanges said stream data between said outside line and said extension node (col. 7, lines 50-55), and said bus manager manages a call-in to said extension

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node and a call-out from said extension node (col. 2, lines 59-69 and col. 5, line 55-col. 6, line 32, esp. col. 6, lines 16-32). Akatsu possibly does not expressly disclose that the line manager exchanges information with the outside line and an extension node according to a request from said bus manager; however, the line manager would not be able to determine when to bridge communication between the internal and external lines without some sort of mechanism, such as coordination between the bus and line manager. The line manager exchanges data between the internal and external lines; however, the line manager does not exchange all of the information present on the bus. Rather the line manager only exchanges the information destined for external communication. The bus manager is able to determine which data sets are destined for external communication since the bus manager manages call-in and call-out of the extension nodes. It would have been obvious to one of ordinary skill in the art at the time of the invention to have the line manager exchange information with the outside line and an extension node according to a request from said bus manager in order to enable the line manager, under the guidance of the bus manager, to determine when to bridge communication between the internal and external lines.

14. Regarding claim 6, incorporating arguments for the rejection of claim 2, Akatsu discloses an information terminal which comprises a telephone for transmitting and receiving telephone signal through a serial bus (Fig. 6; col. 3, lines 1-6; col. 7, line 27; and col. 9, lines 40-64), a TV set for receiving TV signal through said serial bus (col. 6, line 63-col. 7, line 10), and a bus manager for controlling said serial bus (col. 2, lines 59-69 and col. 5, line 55-col. 6, line 32, esp. col. 6, lines 16-32). Akatsu possibly does not expressly disclose that the bus manager comprises two pairs of an asynchronous interface and an isochronous interface for said telephone signal and

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said TV signal, respectively; however, Akatsu does disclose that the bus manager has an asynchronous interface and an isochronous interface. It is generally considered to be within the ordinary skill in the art to adjust, vary, select, or optimize the numerical parameters or values of any system absent a showing of criticality in a particular recited value. The burden of showing criticality is on applicant. In re Mason, 87 F.2d 370, 32 USPQ 242 (CCPA 1937); Marconi Wireless Telegraph Co. v. U.S., 320 U.S. 1, 57 USPQ 471 (1943); In re Schneider, 148 F.2d 108, 65 USPQ 129 (CCPA 1945); In re Aller, 220 F.2d 454, 105 USPQ 233 (CCPA 1055); In re Saether, 492 F.2d 849, 181 USPQ 36 (CCPA 1974); In re Antonie, 559 F.2d 618, 195 USPQ 6 (CCPA 1977); In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). It would have been obvious to one of ordinary skill in the art at the time of the invention to have any number of asynchronous and isochronous interfaces, including two pairs of an asynchronous interface and an isochronous interface, absent a showing of criticality by Applicant.

15. Regarding claim 7, Akatsu discloses a gateway which comprises a telephone gate way (Fig. 6; col. 3, lines 1-6; col. 7, line 27; and col. 9, lines 40-64) and a TV gateway (col. 7, lines 50-59) which are connected with a bus manager (col. 2, lines 59-69 and col. 5, line 55-col. 6, line 32, esp. col. 6, lines 16-32), wherein: said telephone gateway transfers telephone signal from public switched telephone network to a serial bus, and transfers the other way around (col. 7, lines 15-59); said TV gateway receives TV signal from TV line, and transfer said TV signal to said bus manager (col. 7, lines 15-59). Akatsu possibly does not expressly disclose that the bus manager comprises two pairs of an asynchronous interface and an isochronous interface for said telephone signal and said TV signal, respectively; however, Akatsu does disclose that the bus manager has an asynchronous interface and an isochronous interface. It is generally considered

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to be within the ordinary skill in the art to adjust, vary, select, or optimize the numerical parameters or values of any system absent a showing of criticality in a particular recited value.

The burden of showing criticality is on applicant. In re Mason, 87 F.2d 370, 32 USPQ 242 (CCPA 1937); Marconi Wireless Telegraph Co. v. U.S., 320 U.S. 1, 57 USPQ 471 (1943); In re Schneider, 148 F.2d 108, 65 USPQ 129 (CCPA 1945); In re Aller, 220 F.2d 454, 105 USPQ 233 (CCPA 1055); In re Saether, 492 F.2d 849, 181 USPQ 36 (CCPA 1974); In re Antonie, 559 F.2d 618, 195 USPQ 6 (CCPA 1977); In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). It would have been obvious to one of ordinary skill in the art at the time of the invention to have any number of asynchronous and isochronous interfaces, including two pairs of an asynchronous interface and an isochronous interface, absent a showing of criticality by Applicant.

16. Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Akatsu et al (USPN 6,496,862) in view of Ho (USPN 4,747,130).

17. Regarding claim 8, Akatsu discloses a call-in signal processing method for a network switching system using asynchronous and isochronous transfer modes, wherein stream data transferred on a serial bus are exchanged through a gateway between an outside line and an extension node, or between an extension node and the other extension node (col. 2, line 54-col. 3, line 57), which comprises the steps of: selecting at said gateway which of isochronous or asynchronous data stream on the basis of setup data (col. 9, lines 40-64); calling one or more extension nodes (col. 9, lines 40-64); securing one or more isochronous channels on the basis of responses from said extension nodes (col. 9, lines 40-64); allowing said extension nodes to start talking (col. 9, lines 40-64). Since Akatsu focuses on the situation where an MPEG and IP stream are being connected, Akatsu possibly does not expressly disclose the step of selecting at

said gateway which of an automatic transfer by number display, a global call-in, or a manual call-in on the basis of setup data. However, Akatsu does expressly disclose receiving a call, determining the type of call (isochronous or asynchronous and MPEG or IP) and calling the node for which the call is destined. It is well known in the art to have a unicast connection (manual call-in), a multicast connection (global call-in or conference call), and caller ID (number display) information. It would have been obvious to one of ordinary skill in the art at the time of the invention to select at the gateway which of an automatic transfer by number display, a global call-in, or a manual call-in on the basis of setup data in order to select the correct number of units for which the connection is destined and in order to determine the number of connections needed to complete the call. Akatsu possibly does not expressly disclose the step of sending simultaneously call status of a station of which call status is changed to all the extension node connected with said serial bus. Ho teaches, in a telecommunication system, using a common data communication facility connected to all modules (analogous to a bus) to broadcast resource availability to all modules (col. 3, lines 20-25 and col. 3, lines 63) in order to allow resource searching to occur within each module individually (col. 3, lines 58-63). It would have been obvious to one of ordinary skill in the art at the time of the invention to send simultaneously call status of a station of which call status is changed to all extension nodes connected with the serial bus in order to allow each node to be able to determine the availability of bandwidth individually.

18. Regarding claim 9, incorporating arguments for the rejection of claims 2 and 5, Akatsu discloses a call-out signal processing method for a network switching system using asynchronous and isochronous transfer modes, wherein stream data transferred on a serial bus are exchanged

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through a gateway between an outside line and an extension node, or between an extension node and the other extension node (col. 2, line 54-col. 3, line 57), which comprises the steps of: receiving at said gateway a call-out from said extension node (Fig. 6; col. 3, lines 1-6; col. 7, line 27; and col. 9, lines 40-64) where it would have been obvious to one of ordinary skill in the art at the time of the invention to have the gateway receive a call-out due to the presence of telephonic equipment. Since Akatsu does not disclose the steps necessary to connect a call, Akatsu possibly does not expressly disclose confirming at said gateway a call status of call object; securing an isochronous channel for transmission; securing an isochronous channel for reception; allowing said call object to start talking, when said call object has responded; sending, to said extension node which carried out call-out, such a call status that indicates that said call object does not respond, when said call object has not responded; and releasing said isochronous channels for transmission and reception, when detecting an on-hook of said extension node which has made said call-out; however, such steps would have been obvious to one of ordinary skill in the art at the time of the invention since such steps are necessary, or at least desirable, in order to complete a call. Confirming at the gateway a call status of call object is desirable in order to ensure that the call is intended so that the gateway does not waste resources attempting a connection that was not intended. Securing an isochronous channel for transmission and securing an isochronous channel for reception are necessary in order to allow two-way communication to occur within the system. Allowing said call object to start talking, when said call object has responded is necessary in order to allow the call to be completed. Sending, to said extension node which carried out call-out, such a call status that indicates that said call object does not respond, when said call object has not responded is necessary in order to inform the calling party that the called

party is not available so as the system resources used for the call can be released. Releasing the isochronous channels for transmission and reception, when detecting an on-hook of said extension node which has made said call-out is necessary in order to free system resources when the call is complete. Akatsu possibly does not expressly disclose the step of sending simultaneously call status of a station of which call status is changed to all the extension node connected with said serial bus. Ho teaches, in a telecommunication system, using a common data communication facility connected to all modules (analogous to a bus) to broadcast resource availability to all modules (col. 3, lines 20-25 and col. 3, lines 63) in order to allow resource searching to occur within each module individually (col. 3, lines 58-63). It would have been obvious to one of ordinary skill in the art at the time of the invention to send simultaneously call status of a station of which call status is changed to all extension nodes connected with the serial bus in order to allow each node to be able to determine the availability of bandwidth individually.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel J. Ryman whose telephone number is (703)305-6970. The examiner can normally be reached on Mon.-Fri. 7:00-5:00 with every other Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu can be reached on (703)308-6602. The fax phone numbers for the organization where this application or proceeding is assigned are (703)308-6743 for regular communications and (703)308-9051 for After Final communications.

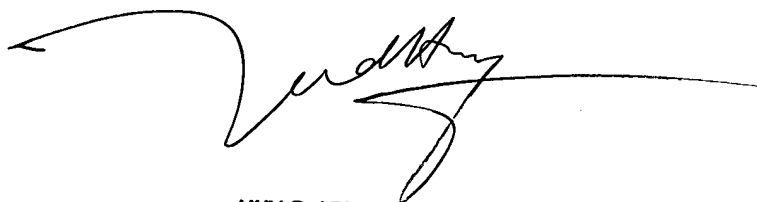
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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)305-3900.

Daniel J. Ryman
Examiner
Art Unit 2665

DSR

Daniel J. Ryman
July 16, 2003

A handwritten signature in black ink, appearing to read 'Huy D. Vu', with a long horizontal line extending to the right.

HUY D. VU
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600